

CENSUS BULLETIN.

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AGRICULTURE.

NORTH DAKOTA.

HON. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture in the state of North Dakota, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It also includes the house in which the farmer resides, and all other buildings used by him in connection with his farming operations.

The farms of North Dakota, June 1, 1900, numbered 45,332 and were valued at \$198,780,700, of which amount \$25,428,430, or 12.8 per cent, represents the value of buildings, and \$173,352,270, or 87.2 per cent, the value of the land and improvements other than buildings. On the same date the value of farm implements and machinery was \$14,055,560, and of live stock, \$42,430,491. These values, added to that of farms, give the "total value of farm property," \$255,266,751.

The products derived from domestic animals, poultry, and bees, including animals sold and animals slaughtered on farms, are referred to in this bulletin as "animal prod-

ucts." The total value of such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was \$64,252,494, of which amount \$10,211,677, or 15.9 per cent, represents the value of animal products, and \$54,040,817, or 84.1 per cent, the value of crops, including forest products cut or produced on farms. The total value of farm products for 1899 is approximately three times that for 1889, but a part of this increase is doubtless due to a more detailed enumeration in 1900 than in 1890.

The "gross farm income" is obtained by deducting the value of the products fed to live stock on the farms of the producers from the total value of farm products. In 1899 the reported value of products fed was \$10,288,396, leaving \$53,964,104 as the gross farm income. The percentage which this latter amount is of the "total value of farm property" is referred to as the "percentage of income upon investment." For North Dakota, in 1899, it was 21.1 per cent. As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

The statistics presented in this bulletin will be treated in greater detail in the report on agriculture in the United States. The present publication is designed to present a summarized advance statement for North Dakota.

Very respectfully,

L. G. Powers.
Chief Statistician for Agriculture.

AGRICULTURE IN NORTH DAKOTA.

GENERAL STATISTICS.

The total land area of North Dakota is 70,195 square miles, or 44,924,800 acres, of which 15,542,640 acres, or 34.6 per cent, are included in farms.

The greater portion of the state lies within the drainage basins of the Missouri River and the Red River of the North. West and south of the Missouri, the surface is generally undulating, growing rugged and mountainous in the extreme west and southwest. The eastern half of the state is a rolling country abounding in small lakes and rivers, many of which are bordered by timber. The prairie land of this region is unequalled for grazing. Except for the "Bad Lands" district in the southwestern part, the soil throughout the state is unusually fertile, being nearly everywhere a rich, black loam, varying in depth from a few inches on the highest hills to from 5 to 18 feet in the valleys. It is easily tilled, and as its composition favors the absorption and retention of moisture, it is especially adapted to the production of wheat and barley. The subsoil is strongly impregnated with lime and alkaline elements, which serve as perpetual fertilizers.

NUMBER AND SIZE OF FARMS.

Table 1 gives, by decades since 1860, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1860 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900	45,382	15,542,640	9,644,520	5,898,120	342.9	62.1
1890	27,611	7,660,333	4,653,015	3,007,318	277.4	60.8
1880 ¹	17,435	3,800,656	1,150,413	2,650,243	218.0	30.3
1870 ¹	1,720	302,376	42,645	259,731	175.8	14.1
1860 ¹	123	26,448	2,115	24,333	215.0	8.0

¹ Dakota territory.

Since 1860, both the number of farms and the total farm acreage show a continuous increase for each decade, notwithstanding the fact that statistics for 1860 to 1880 inclusive, are for the entire territory now divided between North and South Dakota. The rates of gain in the last decade were 64.2 per cent and 102.9 per cent, respectively. The greater rapidity of the gain in total farm acreage in each decade since 1870 is shown by the increase in the

average size of farms. A gain in the percentage of farm land improved is shown for each decade since 1860, the comparatively small increase in the last decade being due, in part, to a stricter definition of the term "improved land" in 1900 than in previous census years.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1860.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1860 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implementments and machinery.	Live stock.	Farm products. ¹
1900	\$255,266,751	\$193,780,700	\$14,055,560	\$42,430,491	\$64,252,494
1890	100,745,779	75,310,805	6,648,180	18,787,294	21,284,936
1880 ²	31,254,449	22,401,084	2,390,091	6,463,274	5,648,814
1870 ³	8,007,829	2,085,265	142,612	779,952	405,657
1860 ²	151,185	96,445	15,574	39,116	

¹ For the year preceding that designated.

² Dakota territory.

³ Values in 1870 were reported in depreciated currency. To reduce to specie basis of other years they must be diminished one-fifth.

⁴ Includes betterments and additions to live stock.

As in Table 1, figures for early decades are for the undivided territory, but despite this fact, all kinds of farm property show a constant and rapid increase throughout the entire period. The increase in the last decade amounted to \$154,520,972, or 153.4 per cent. Of this amount, \$123,470,395, or 79.9 per cent, represents the increase in the value of farms; \$23,643,197, or 15.3 per cent, in that of live stock; and \$7,407,380, or 4.8 per cent, in that of implements and machinery. The increase in the value of farms, for the decade, was 163.9 per cent; of implements and machinery, 111.4 per cent; and of live stock, 126.0 per cent. The value of farm products for 1899 exceeds that reported for 1889 by \$42,987,556, a gain of over 200 per cent. A portion of this increase, and of that noted in the case of implements and machinery, is doubtless the result of a more detailed enumeration in 1900 than in previous census years.

COUNTY STATISTICS.

Table 3 gives an exhibit of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With build- ings.	Total.	Improved.	Land and improve- ments (ex- cept build- ings).	Buildings.	Imple- ments and machinery.	Live stock.		Labor.	Fertili- zers.
The State	45,332	48,550	15,542,640	9,644,520	\$173,352,270	\$25,428,480	\$14,055,560	\$42,430,491	\$53,964,104	\$9,207,220	\$13,855
Barnes	1,665	1,509	740,553	525,320	9,125,050	1,227,770	670,650	1,569,747	2,901,972	518,840	390
Benson	1,266	1,245	874,939	224,127	3,908,780	617,300	425,950	911,209	1,186,090	196,290	300
Billings	163	154	88,156	22,498	2,022,600	117,490	41,940	1,078,290	262,887	56,408	
Bottineau	1,966	1,644	440,792	194,211	3,291,670	420,750	358,040	900,918	926,752	123,520	200
Burleigh	565	541	204,749	81,745	830,180	170,730	84,370	693,503	389,736	54,620	
Cass	2,309	2,200	1,080,650	977,951	22,551,710	2,832,160	1,309,070	2,566,290	6,825,887	1,524,740	1,790
Cavaller	2,230	2,149	595,266	322,399	5,882,090	807,900	685,050	1,312,717	1,982,281	224,640	720
Dickey	933	892	470,810	249,915	2,542,380	442,680	212,920	978,893	864,758	104,130	250
Eddy	577	566	235,517	146,641	1,955,780	292,600	192,540	431,063	621,075	107,750	140
Emmons	820	767	286,542	103,482	886,900	234,700	121,420	1,030,080	509,464	53,210	150
Foster	564	540	246,952	165,147	2,839,330	295,090	249,270	502,302	732,176	84,550	
Grand Forks	2,368	2,258	861,872	749,567	14,983,410	2,141,980	872,400	2,001,451	4,410,853	856,370	1,600
Griggs	767	747	327,947	219,100	3,449,010	444,350	311,870	670,629	1,242,692	203,100	260
Kidder	264	257	128,731	48,632	537,190	136,530	61,590	598,308	222,635	30,830	70
Lamoure	906	890	347,861	218,055	8,128,130	589,050	410,930	835,265	998,960	97,990	
Logan	253	246	97,518	31,271	368,700	72,440	41,760	544,654	206,985	19,000	
McHenry	1,101	1,086	264,969	92,908	1,871,520	269,190	130,650	836,937	405,868	57,340	980
McIntosh	744	730	275,933	142,728	1,251,010	270,840	182,790	609,384	606,778	82,200	
McLean	763	751	177,530	65,264	1,201,230	182,320	143,130	836,764	402,702	23,260	170
Mercer	295	292	120,164	37,789	354,280	111,030	41,520	685,835	225,768	20,190	200
Morton	1,040	1,000	405,467	124,300	1,242,870	405,600	192,230	1,636,976	734,228	54,580	500
Nelson	1,216	1,171	433,738	254,434	3,995,230	576,750	367,320	915,902	1,345,368	240,810	
Oliver	197	184	62,081	21,573	174,630	43,480	24,750	292,100	130,137	5,280	
Pembina	2,106	2,077	655,324	347,040	11,337,840	1,631,750	814,840	1,657,806	3,190,014	481,640	820
Pierce	1,039	1,014	269,299	126,609	1,930,060	258,310	267,490	617,680	517,190	104,910	275
Ramsey	1,551	1,527	536,495	314,512	5,258,190	784,840	498,920	1,118,961	1,536,675	246,450	360
Ransom	928	883	393,383	234,461	8,733,820	534,520	312,290	1,027,840	1,216,003	241,300	460
Richland	2,256	2,161	719,052	377,916	11,399,940	1,825,770	772,320	1,715,458	3,458,286	705,620	1,180
Rolette	1,003	987	257,694	127,777	1,642,940	232,620	237,570	579,433	590,770	72,000	
Sargent	924	903	359,779	208,645	2,896,480	462,510	285,730	893,279	950,410	133,510	400
Stark	846	805	523,624	137,515	1,401,440	289,900	180,470	2,882,728	831,441	117,920	10
Steele	871	844	386,261	320,337	6,365,410	681,900	405,000	820,000	1,705,003	287,050	
Stutsman	1,165	1,123	516,248	263,941	4,105,000	748,580	421,410	1,182,017	1,189,630	148,920	500
Towner	1,207	1,132	348,699	220,980	3,277,490	406,180	374,170	792,735	1,117,069	200,770	270
Trall	1,296	1,274	553,597	315,687	13,616,920	1,788,540	785,390	1,430,407	3,461,434	810,980	520
Walsh	2,636	2,578	771,914	615,279	13,389,690	1,915,680	825,830	1,777,187	3,801,920	642,740	410
Ward	1,670	1,603	330,847	71,200	1,377,470	315,480	179,250	1,244,651	405,259	42,000	120
Wells	1,444	1,420	470,004	291,201	4,576,820	591,860	478,520	1,042,140	1,361,552	182,300	750
Williams	122	119	32,593	15,036	171,950	78,480	26,850	403,300	334,897	21,310	
Devils Lake ¹	198	197	49,416	8,560	117,230	27,410	24,140	33,171	33,998		
Fort Berthold ¹	240	225	61,273	12,652	69,010	59,566	37,420	175,496	58,621	1,670	
Standing Rock ¹	787	756	85,571	14,480	58,450	96,040	45,690	554,543	103,903	1,650	
Turtle Mountain ¹	68	5	2,721	1,675	15,880	670	100	13,000	10,767		

¹ Indian reservation.

In nearly one-half of the counties of the state more than twice as many farms were reported in 1900 as in 1890, and substantial gains were made by all counties except Dickey, Kidder, and Sargent, in each of which a slight decrease occurred.

Increases in the total farm acreage, and also in the acreage of improved land, are shown for all counties. The average size of farms is, as a rule, smallest for the counties in the northern half of the state, and largest for the southern counties. It ranges from 198.1 acres in Ward county to 618.9 acres in Stark county, though most counties show but slight variation from the state average of 342.9 acres. For the state the average value of farms (lands, improvements, and buildings) is \$4,385; in Traill and Cass counties it is more than \$10,000, but ranges generally from \$2,000 to \$5,000. All counties show large gains over the values reported in 1890.

Dickey and Kidder are the only counties in which the value of implements and machinery reported in 1900 was less than that in 1890. In about two-thirds of the counties

this valuation has more than doubled, and the remaining counties show marked increases.

An increase in the value of live stock is shown for every county in the state, the value in many counties being three times as great as it was in 1890.

The counties at the eastern end of the state, lying in the great wheat region of the Red River Valley, report the largest expenditures for labor in 1899. The amounts expended vary widely in the different sections of the state, but, as a rule, were smallest for the less cultivable western counties, where stock raising is the principal industry.

The total expenditure for fertilizers in 1899 was over 50 per cent greater than in 1889, but the average per farm is still under \$0.50. In 1889 barely one-third of the counties of the state reported the use of commercial fertilizers, while in 1899 it was purchased by farmers in over two-thirds of the counties. A few counties, which have undergone territorial reductions in the decade, show decreased expenditures.

FARM TENURE.

Table 4 gives a comparative exhibit of the number of farms operated by owners and tenants in 1880, 1890, and 1900. Tenants are subdivided into two groups: "Cash tenants," who pay a rental in cash or a stated amount of labor or farm produce, and "share tenants," who pay as rental a stated share of the products.

In Table 5 the tenure of farms for 1900 is given by race of farmer, the farms operated by owners being subdivided into four groups, designated as farms operated by "owners," "part owners," "owners and tenants," and "managers." These groups comprise, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others, owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners. ¹	Cash tenants.	Share tenants.	Owners. ¹	Cash tenants.	Share tenants.
1900.....	45,332	41,467	591	3,274	91.5	1.3	7.2
1890.....	27,611	25,698	539	1,374	93.1	1.9	5.0
1880 ²	17,435	16,737	72	606	96.1	0.4	3.5

¹ Including "part owners," "owners and tenants," and "managers."

² Dakota territory.

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State.....	45,332	43,866	6,891	212	495	591	3,274
White.....	43,998	42,549	6,889	211	495	588	3,266
Colored.....	1,334	1,317	5	1		3	8
Indian.....	1,816	1,309		1		1	5
Negro.....	18	8	5			2	3

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

The State.....	100.0	74.7	15.2	0.5	1.1	1.3	7.2
White.....	100.0	74.0	15.7	0.5	1.1	1.3	7.4
Colored.....	100.0	98.7	0.4	0.1		0.2	0.6

The number of farms in North Dakota has increased rapidly since 1890. Comparisons going farther back than that can not be made, as no separate statistics for the farms

within the area now forming the state are available in the reports of earlier censuses. It is noticeable, however, that the number of farms in North Dakota alone, in 1890, was much greater than the number in the entire territory of Dakota in 1880. In the last decade the total number of farms increased 17,721, or 64.2 per cent. In the same period owners increased in number 15,769, or 61.4 per cent; cash tenants, 52, or 9.6 per cent; and share tenants, 1,900, or 138.3 per cent. The share-tenant class shows an increase for each decade, and a large and growing preponderance over cash tenants, who were approximately one to two and one-half share tenants in 1890, and one to five and one-half in 1900; the total number of tenant-operated farms in 1900, however, constituted only 8.5 per cent of the whole number. This increase in the proportion of share to cash tenants, is the opposite of what is taking place in many Eastern and Southern states, and is probably due to the fact that settlers who come to the wheat-growing regions of this state with the intention of ultimately owning farms find share tenancy an exceptionally favorable step toward this end. Early comers have taken up, on easy terms, more land than they can work, and are willing to rent on shares to newcomers who may not have sufficient capital to purchase land outright, or to meet the expense required for stock and implements on farms for which a cash rental is demanded.

Of the farms of the state 97.1 per cent are operated by white farmers, and 2.9 per cent by colored farmers, 98.7 per cent of the latter being Indians. Of the white farmers, 90.2 per cent own all or a part of the farms they operate, and 9.8 per cent operate farms owned by others. The corresponding percentages for colored farmers are 99.2 and 0.8.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State.....	45,332	342.9	15,542,640	100.0	\$255,266,751	100.0
White farmers.....	43,998	349.7	15,384,854	99.0	253,834,652	99.5
Indian farmers.....	1,316	116.0	152,714	1.0	1,844,989	0.5
Negro farmers.....	18	309.6	5,572	(1)	88,010	(1)
Owners.....	33,866	283.9	9,614,178	61.8	159,129,886	62.3
Part owners.....	6,891	551.1	3,820,029	24.6	57,100,278	22.4
Owners and tenants.....	212	497.6	105,482	0.7	1,826,944	0.5
Managers.....	495	1,336.8	661,711	4.3	11,872,982	4.5
Cash tenants.....	591	336.2	198,682	1.3	3,416,271	1.3
Share tenants.....	3,274	349.0	1,142,558	7.3	22,921,385	9.0

¹ Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State -----	\$3,824	\$561	\$310	\$936	\$1,190	21.1
White farmers -----	3,932	574	317	946	1,222	21.2
Indian farmers -----	220	133	83	585	155	15.2
Negro farmers -----	3,439	437	237	776	971	19.9
Owners -----	3,100	500	276	823	989	21.1
Part owners -----	5,895	753	451	1,184	1,745	21.1
Owners and tenants -----	4,309	578	366	1,006	1,357	21.7
Managers -----	14,043	1,680	820	6,433	5,007	21.8
Cash tenants -----	4,090	449	243	997	1,094	18.9
Share tenants -----	5,326	638	301	736	1,535	21.9

The average value of the various forms of farm property and the average value of products are much lower for farms operated by Indians than for those operated by white farmers. The few farms operated by negroes have almost as great an average acreage as farms operated by white farmers, and almost as high a value of farm property and products per acre, but as the number of their farms is only 18, the averages have comparatively little significance, as showing any general prosperity on the part of negro farmers as a class. The farms operated by "managers" have the largest average area, 1,336.8 acres, and those operated by "owners" the smallest, 283.9 acres. Of the 1,346 farms, each containing 1,000 acres or over, 586 are operated by "part owners;" 513 by "owners;" 143 by "managers;" 72 by "share tenants;" 18 by "cash tenants;" and 14 by "owners and tenants."

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 give the most important statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Num- ber of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State -----	45,332	342.9	15,542,640	100.0	\$255,266,761	100.0
Under 3 acres -----	164	2.2	346	(1)	785,526	0.3
3 to 9 acres -----	253	6.0	1,524	(1)	146,192	0.1
10 to 19 acres -----	384	15.2	5,841	(1)	312,341	0.1
20 to 49 acres -----	555	32.5	18,063	0.1	702,590	0.3
50 to 99 acres -----	716	82.5	59,040	0.4	1,330,780	0.5
100 to 174 acres -----	18,471	159.5	2,945,787	19.0	43,382,624	17.0
175 to 259 acres -----	2,526	220.2	556,133	3.6	11,453,994	4.5
260 to 499 acres -----	15,813	369.8	5,847,415	37.6	99,033,788	38.8
500 to 999 acres -----	5,114	696.4	3,561,491	22.9	59,226,295	23.2
1,000 acres and over -----	1,346	1,892.3	2,547,000	16.4	38,892,671	15.2

¹ Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total invest- ment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State -----	\$3,824	\$561	\$310	\$936	\$1,190	21.1
Under 3 acres -----	77	142	36	4,846	809	15.9
3 to 9 acres -----	187	152	37	252	180	22.6
10 to 19 acres -----	115	160	45	493	133	16.4
20 to 49 acres -----	335	208	67	656	252	19.9
50 to 99 acres -----	1,042	252	109	456	371	20.0
100 to 174 acres -----	1,400	245	151	553	452	19.2
175 to 259 acres -----	3,021	532	260	721	1,001	22.1
260 to 499 acres -----	4,366	641	341	915	1,370	21.9
500 to 999 acres -----	8,255	1,133	626	1,562	2,476	21.4
1,000 acres and over -----	20,506	2,371	1,385	4,638	6,051	20.9

The group of farms containing from 100 to 174 acres comprises the largest number of farms of any one group, and the group between 260 and 499 acres the next largest, showing the large proportion of half and quarter-section holdings. The two groups together contain 34,284 farms, or 75.5 per cent of the total number. The group of farms of 260 to 499 acres is the most important in respect to the value of farm property and acreage, showing over one-third of the totals for each.

With a few exceptions the average values of the several forms of farm property and products increase with the size of the farms. The high average value of live stock on farms of the first group is due to the fact that among them are some farms, the operators of which use large ranges on the public domain but actually own or rent less than 3 acres of land. The high average gross income for this class of farms is due to the fact that it includes the stock farms just mentioned, the florists' establishments, and a number of city dairies. It should be borne in mind that the incomes from these industries are determined, not so much by the acreage of land used, as by the capital invested in buildings, implements, and live stock, and the amounts expended for labor and fertilizers.

The average gross incomes per acre for the various groups classified by area are as follows: Farms under 3 acres, \$360.32; 3 to 9 acres, \$21.64; 10 to 19 acres, \$8.78; 20 to 49 acres, \$7.74; 50 to 99 acres, \$4.50; 100 to 174 acres, \$2.83; 175 to 259 acres, \$4.55; 260 to 499 acres, \$3.71; 500 to 999 acres, \$3.56; 1,000 acres and over, \$3.20.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

Tables 10 and 11 present the leading statistics relating to farms classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the total value of products not fed to live stock, the

farm is classified as a "hay and grain" farm. If vegetables are the leading crop, constituting 40 per cent of the products, it is a "vegetable" farm. The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive 40 per cent of their income from any one class of farm products. Farms for which no income was reported in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	45,332	342.9	15,542,640	100.0	\$255,266,751	100.0
Hay and grain	40,058	342.7	13,726,973	88.3	230,500,630	90.3
Vegetables	125	130.3	16,282	0.1	253,633	0.1
Fruits	7	177.1	1,249	(¹)	12,838	(¹)
Live stock	3,056	450.4	1,376,325	8.9	19,851,954	7.6
Dairy produce	1,196	222.5	266,059	1.7	3,278,252	1.3
Flowers and plants	3	1.0	3	(¹)	11,635	(¹)
Nursery products	3	41.0	123	(¹)	5,985	(¹)
Miscellaneous	884	176.1	155,635	1.0	1,551,759	0.7

¹ Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State -----	\$3,824	\$561	\$310	\$936	\$1,190	21.1
Hay and grain-----	4,113	583	828	730	1,237	21.5
Vegetables-----	1,178	372	225	854	836	16.5
Fruits-----	964	279	129	460	823	17.5
Live stock-----	3,847	477	209	3,799	1,251	19.8
Dairy produce-----	2,334	237	145	965	235	10.8
Flowers and plants-----	2,867	953	28	87	987	25.4
Nursery products-----	653	1,080	153	87	1,855	93.8
Miscellaneous-----	1,323	234	99	439	225	10.8

Table 10 shows that by far the most important class of farms in the state is that composed of hay and grain farms, which constitute 88.4 per cent of the total number of farms, 88.3 per cent of the total acreage, and 90.3 per cent of the total value of farm property. Live-stock farms, next in importance, comprise 8.9 per cent of the acreage and 7.6 per cent of the value of farm property. For the several classes of farms the average values per acre of products not fed to live stock are as follows: For flower and plant farms, \$986.67; nursery farms, \$45.24; hay and grain farms, \$3.61; live-stock farms, \$2.78; vegetable farms, \$2.58; fruit farms, \$1.82; dairy farms,

\$1.33; and miscellaneous farms, \$1.28. In computing these averages, the total area of the farms of each group is used, and not the acreage devoted to the crop from which the principal income is derived.

The wide variations shown in the averages and percentages of gross income are largely due to the fact that in computing gross income no deductions are made for expenditures. For florists' establishments and nurseries, the average expenditure for such items as labor and fertilizers represents a far greater percentage of the gross income than in the case of "live-stock" or "miscellaneous" farms. Were it possible to present the average net income, the variations shown would probably be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	45,332	342.9	15,542,640	100.0	\$255,266,751	100.0
\$0	2,528	133.8	464,771	3.0	4,172,610	1.6
\$1 to \$19	1,782	164.9	290,604	1.9	2,671,870	1.1
\$50 to \$99	2,144	187.0	400,848	2.6	3,687,010	1.4
\$100 to \$249	4,123	189.9	782,018	5.0	8,857,630	3.4
\$250 to \$499	5,645	210.9	1,190,365	7.7	13,689,860	5.4
\$500 to \$999	10,161	269.6	2,740,126	17.6	36,613,030	14.8
\$1,000 to \$2,499	13,843	391.8	5,423,386	34.9	98,067,401	37.6
\$2,500 and over	5,121	820.4	4,249,922	27.3	90,002,840	35.2

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF--					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and im- prove- ments (except build- ings).	Build- ings.	Imple- ments and ma- chinery.	Live stock.		
The State -----	\$3, 824	\$561	\$310	\$936	\$1, 190	21.1
\$0 -----	1, 058	82	57	454		
\$1 to \$49 -----	973	126	82	823	30	2.6
\$50 to \$99 -----	1, 060	158	96	400	48	2.6
\$100 to \$249 -----	1, 139	195	116	573	139	6.9
\$250 to \$499 -----	1, 449	232	163	561	352	14.5
\$500 to \$999 -----	2, 269	371	235	728	713	19.8
\$1,000 to \$2,499 -----	4, 780	733	373	1, 054	1, 538	22.2
\$2,500 and over -----	12, 601	1, 686	899	2, 379	4, 431	25.2

Many of the farms reporting no income for 1899 were homesteads, taken up too late for cultivation during that year. Some were farms from which no reports of the products of 1899 could be secured, as the persons in charge,

June 1, 1900, did not operate the farms in 1899 and could give no definite information concerning the products of that year. To this extent the reports fall short of giving a complete exhibit of farm income in 1899.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep, by age and sex. The new classification permits a very close comparison with previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

LIVE STOCK.	Age in years.	ON FARMS.			NOT ON FARMS.
		Number.	Value.	Average value.	Number.
Calves	Under 1	156,420	\$1,510,116	\$9.85	1,729
Steers	1 and under 2	92,234	1,806,101	20.23	581
Steers	2 and under 3	69,920	2,073,268	29.65	462
Steers	3 and over	25,531	971,168	38.04	168
Bulls	1 and over	10,842	476,817	45.10	60
Heifers	1 and under 2	69,838	1,879,618	29.90	489
Cows kept for milk	2 and over	125,503	4,078,548	32.50	5,616
Cows and heifers not kept for milk.	2 and over	108,146	3,425,103	31.67	558
Colts	Under 1	25,625	546,743	19.10	415
Horses	1 and under 2	32,131	1,127,103	35.08	398
Horses	2 and over	299,192	21,054,668	70.37	15,301
Mule colts	Under 1	408	11,615	28.47	21
Mules	1 and under 2	510	25,287	49.48	4
Mules	2 and over	5,962	439,514	73.72	210
Asses and burros	All ages	96	13,231	137.82	18
Lambs	Under 1	230,515	881,406	1.65	143
Sheep (ewes)	1 and under 2	840,273	1,193,611	3.51	224
Sheep (rams and wethers)	2 and over	111,164	412,119	3.71	72
Swine	All ages	191,798	930,470	4.85	3,016
Goats	All ages	1,122	5,808	4.73	58
Fowls: ¹					
Chickens ²		1,409,205			
Turkeys		89,073	477,858		
Geese		17,204			
Ducks		28,816			
Bees (swarms of)		279	1,474		
Value of all live stock.			42,430,491		

¹ The number reported is of fowls over 8 months old. The value is of all, old and young.

² Including Guinea fowls.

The total value of all live stock on farms and ranges, June 1, 1900, was \$42,430,491. Of this amount, 53.6 per cent represents the value of horses; 27.6 per cent, the value of all neat cattle other than dairy cows; 9.6 per cent, that of dairy cows; 4.7 per cent, that of sheep; 2.2 per cent, that of swine; and 2.3 per cent, that of all other live stock.

The average value of horses two years old and over is higher in North Dakota than in adjacent states. This is due to the fact that on many of the stock farms in the eastern counties unusual efforts have been made to improve the grade of horses kept, and the number of valuable imported horses in these counties is sufficient to raise the average value for the state.

No reports were secured of the value of live stock not on farms and ranges, but it is probable that such animals

have higher average values than farm or range animals. Allowing the same averages, however, the total value of domestic animals not on farms would be \$1,394,790. That would make the total value of all live stock in the state, exclusive of poultry and bees not on farms, \$43,825,300.

CHANGES IN LIVE STOCK KEPT ON FARMS.

The following table shows the changes since 1850 in the numbers of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS: 1850 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep. ¹	Swine.
1900	125,503	531,931	359,948	6,976	451,437	191,798
1890	89,289	193,585	180,931	8,709	136,413	92,213
1880	40,572	100,243	41,070	2,703	30,244	68,394
1870	4,151	8,816	2,514	225	1,601	2,038
1860	286	616	84	19	193	287

¹ Lambs not included.

² Dakota territory.

Stock raising forms a very important part of the agriculture of North Dakota. The decade of greatest development was presumably that from 1870 to 1880, as during that period the numbers of all kinds of domestic animals in Dakota territory increased from ten to thirty times. Over three times as many dairy cows were reported in 1900 in North Dakota as were reported by Dakota territory in 1880. The number reported in 1900 shows an increase of 42.2 per cent for the last decade, while the gain in the number of other neat cattle during the same time was 174.3 per cent. The number of horses reported in 1900 was nearly three times as great as in 1890, but a decrease of 19.9 per cent occurred in the number of mules. Both sheep and swine show large increases over the numbers reported in 1890, the gain in the number of sheep being 280.9 per cent, and that for swine, 108.0 per cent. A comparison of the poultry report for 1900 (see Table 14) with that for 1890 shows large increases for all kinds of fowls, notwithstanding that in 1900 no fowls under three months old were reported, while in 1890 no such limitation was made.

ANIMAL PRODUCTS.

Table 16 is a summarized exhibit of the animal products of agriculture.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool	Pounds	3,030,478	\$503,744
Mohair and goat hair	Pounds	1,220	448
Milk	Gallons	148,845,280	2,853,183
Butter	Pounds	9,178,615	
Cheese	Pounds	70,881	782,790
Eggs	Dozens	7,433,400	594,751
Poultry			
Honey	Pounds	7,530	1,149
Wax	Pounds	90	
Animals sold			8,902,074
Animals slaughtered			1,578,538
Total			10,211,677

¹ Includes all milk produced, whether sold, consumed, or made into butter or cheese.

The value of animal products in 1899 was \$10,211,677, or 15.9 per cent of the value of all farm products and 18.9 per cent of the gross farm income. Of the above amount 53.6 per cent represents the value of animals sold and slaughtered on farms; 27.9 per cent, that of dairy products; 13.5 per cent, that of poultry and eggs; and 5.0 per cent, that of wool, mohair, goat hair, honey, and wax.

ANIMALS SOLD AND ANIMALS SLAUGHTERED.

The value of animals sold and animals slaughtered on farms is 10.1 per cent of the gross farm income. Of all farms reporting live stock, 18,551, or 43.2 per cent, report sales of live animals, the average receipts being \$210.34 per farm. Of all farms reporting live stock, 25,582, or 59.5 per cent, report animals slaughtered, the average value per farm being \$61.51.

DAIRY PRODUCE.

The production of milk in 1899 was 22,279,168 gallons greater than in 1889, a gain of 83.9 per cent; during the same time, the gain in the number of dairy cows was only 42.2 per cent. This difference is probably due in great part to a more strict definition of the term "dairy cows" in the Twelfth Census, by which many animals, formerly included in this class, were excluded, but it may also indicate that better cows are kept than in 1890 and that better care is given them. Notwithstanding the establishment in the state, during the last ten years, of numerous creameries and cheese factories, the quantity of butter made on farms has increased 60.6 per cent, although a decrease of 46.0 per cent is shown in the quantity of cheese made on farms.

Of the \$2,853,133 given in Table 16 as the value of all dairy produce, \$1,989,890, or 69.7 per cent, represents the value of such products consumed on farms, and \$863,243, or 30.3 per cent, the amount received from sales. Of the latter amount \$545,362 was received from the sale of 3,551,805 pounds of butter; \$298,741, from 3,177,971 gallons of milk; \$14,296, from 23,095 gallons of cream; and \$4,844, from 46,762 pounds of cheese.

POULTRY AND EGGS.

The total value of the products of the poultry industry for 1899 was \$1,377,541, of which amount 56.8 per cent represents the value of eggs produced, and 43.2 per cent, that of fowls raised. In 1899, 7,433,400 dozens of eggs were produced—more than twice as many as ten years before.

WOOL.

Nearly six times as much wool was reported in 1900 as in 1890. Fleeces, however, decreased in average weight from 6.7 pounds in 1890 to 6.5 pounds in 1900. Wool-growing is confined chiefly to the southern half of the state, Stark county reporting the greatest number of sheep, while Billings, Logan, and Mercer counties show the greatest percentages of increase since 1890.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number

per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
The State.....	41,694	359,948	8.6	35,041	125,503	3.6
White farmers.....	40,386	347,149	8.6	31,758	124,799	3.6
Colored farmers.....	1,308	12,799	9.8	286	718	2.5
Owners ¹	37,720	314,959	8.3	31,639	111,414	3.6
Managers.....	457	17,036	37.3	368	1,900	5.4
Cash tenants.....	569	4,013	8.0	446	1,530	3.4
Share tenants.....	3,017	28,940	7.9	2,591	7,589	2.9
Under 20 acres.....	695	7,435	10.7	252	867	3.4
20 to 99 acres.....	1,010	9,526	9.2	747	2,130	2.9
100 to 174 acres.....	15,773	88,470	5.6	11,970	32,199	2.7
175 to 259 acres.....	2,425	15,284	6.3	2,128	6,855	3.2
260 acres and over.....	21,761	239,238	11.0	19,917	83,452	4.2
Hay and grain.....	36,789	290,118	7.9	30,890	106,067	3.4
Vegetable.....	107	796	7.4	50	132	3.0
Live-stock.....	2,946	56,968	19.3	2,368	10,081	4.3
Dairy.....	1,131	7,847	6.9	1,196	7,571	6.3
Miscellaneous ²	721	4,224	5.9	540	1,629	3.0

¹ Including "part owners" and "owners and tenants."

² Including fruit farms, florists' establishments, and nurseries.

CROPS.

The following table gives the statistics of the principal crops grown in 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn.....	62,378	Bushels.....	1,284,870	\$397,278
Wheat.....	4,451,251	Bushels.....	59,888,817	31,738,768
Oats.....	780,517	Bushels.....	22,125,331	5,852,916
Barley.....	287,032	Bushels.....	6,752,060	1,936,982
Rye.....	27,935	Bushels.....	368,210	138,777
Buckwheat.....	1,121	Bushels.....	10,760	7,459
Flaxseed.....	773,999	Bushels.....	7,766,610	7,735,610
Kafir corn.....	25	Bushels.....	875	103
Grass seed.....		Bushels.....	14,045	10,094
Hay and forage.....	1,410,534	Tons.....	1,748,213	5,182,917
Tobacco.....	3	Pound.....	210	22
Broom corn.....	3	Pounds.....	2,030	85
Dry beans.....	270	Bushels.....	2,389	8,872
Dry pease.....	84	Bushels.....	710	1,001
Sweet potatoes.....		Bushels.....	1	48
Potatoes.....	21,936	Bushels.....	2,257,350	587,458
Onions.....	128	Bushels.....	21,373	16,877
Miscellaneous vegetables.....	4,131			239,829
Sorghum.....		Gallons.....	114	37
Sorghum cane.....	10	Tons.....	41	131
Small fruits.....	67			7,785
Grapes.....	12	Centals.....	15	2168
Orchard fruits.....	1120	Bushels.....	1,647	31,061
Nuts.....				8
Forest products.....				112,807
Flowers and plants.....	2			2,990
Seeds.....	48			653
Nursery products.....	131			7,249
Miscellaneous.....	5			14,717
Total.....	7,821,875			54,040,877

¹ Estimated from number of vines or trees.

² Including value of wine, raisins, etc.

³ Including value of cider and vinegar.

⁴ The greater part of this value was derived from products for which no acreage was reported.

Of the total value of crops, wheat contributed 58.8 per cent; other cereals, including Kafir corn, 15.5 per cent; flaxseed, 14.3 per cent; hay and forage, 9.6 per cent; and all other crops, 1.8 per cent.

The average values per acre of the various crops are as follows: Flowers and plants, \$1,450.00; onions, \$127.95;

small fruits, \$116.19; miscellaneous vegetables, \$57.64; nursery products, \$55.34; potatoes, \$26.78; seeds, \$13.60; flaxseed, \$9.99; orchard fruits, \$8.84; cereals, including Kafir corn, \$7.15; and hay and forage, \$3.67. The crops yielding the highest average returns per acre were grown upon highly improved land. Their production requires a relatively great amount of labor and large expenditures for fertilizers.

CEREALS.

The following table is an exhibit of the changes in cereal production since 1859.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1859 TO 1899.

PART 1.—ACREAGE.

YEAR. ¹	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1859	237,092	1,121	62,373	780,517	27,995	4,451,251
1889	109,400	157	11,954	402,865	1,568	2,709,421
1879 ²	16,156	321	90,832	78,220	2,385	265,298

¹No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

YEAR.	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1859	6,752,000	10,760	1,284,870	22,125,331	338,210	59,888,817
1889	1,570,717	939	178,729	5,773,120	12,105	26,403,365
1879 ²	277,424	2,521	2,093,864	2,217,132	21,559	2,843,289
1869 ²	4,118	179	133,140	114,827	170	170,662
1859 ²		115	20,269	2,540	700	945

²Dakota territory.

The total area devoted to cereals in 1889 was 3,235,345 acres, and in 1899, 5,610,349 acres, a gain of 73.4 per cent. The percentages of increase for the principal cereals were as follows: Corn, 421.9; barley, 162.4; oats, 93.7; and wheat, 64.3. Of the total area in cereals in 1899, 79.4 per cent was devoted to wheat; 13.9 per cent, to oats; 5.1 per cent, to barley; 1.1 per cent, to corn; and 0.5 per cent, to rye and buckwheat.

Wheat is grown throughout the state, and was reported by 33,094 farmers, or 73.0 per cent of the total number. The six counties along the eastern border, Cass, Grand Forks, Walsh, Richland, Traill, and Pembina, ranking in the order named, reported almost half of the total area devoted to this cereal. In 1899 the per capita acreage in wheat in North Dakota, 13.9 acres, was larger than in any other state in the Union.

An average of 2.4 acres per capita was devoted to oats in 1899. The six counties above designated as reporting the most wheat, together with Barnes county, also lead in the production of oats. Nearly half the acreage of oats was in these counties. Most of the barley is raised in the northeastern counties, while nearly one-third of the corn is grown in the two southeastern counties of Richland and Cass. Rye, buckwheat, and Kafir corn are of minor importance.

The value of the cereals of 1899, inclusive of Kafir corn, was \$40,125,948, or 74.3 per cent of the total value of crops, and 62.5 per cent of the value of all farm products.

FLAX.

Flax was grown in 1899 by the operators of 17,447 farms, or 38.5 per cent of the total number in the state.

Compared with 1889 the area devoted to this crop shows an increase from 43,724 acres to 773,999 acres. The production increased from 164,319 to 7,766,010 bushels of seed, the average yield per acre rising from 3.8 bushels in 1889, to 10.0 bushels in 1899. The average area per farm in 1899 was 44.3 acres. All counties of the eastern half of the state report large areas in this crop, the cultivation being most extensive in Cass, Wells, Barnes, Ransom, and Grand Forks counties.

HAY AND FORAGE.

In 1900, 34,422 farmers, or 75.9 per cent of the total number, reported hay or forage crops. The average yield per acre, exclusive of cornstalks and corn strippings, was 1.2 tons. The acreage in hay and forage in 1899 was 152.5 per cent greater than ten years before.

In 1899 the acreages and yields of the various kinds of hay and forage were as follows: Wild, salt, or prairie grasses, 1,248,259 acres and 1,536,951 tons; millet and Hungarian grasses, 85,655 acres and 112,538 tons; alfalfa or lucern, 334 acres and 479 tons; clover, 291 acres and 349 tons; other tame and cultivated grasses, 38,095 acres and 38,471 tons; grains cut green for hay, 21,783 acres and 30,486 tons; forage crops, 16,117 acres and 28,116 tons; other crops, 570 acres and 823 tons. In Table 18 the production of cornstalks and corn strippings is included under "hay and forage," but the acreage is included under "corn," the forage being an incidental product of the corn crop.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUIT.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	2,351	65	1,273	6
Cherries	79	24	4	
Peaches				
Pears	2		1	
Plums and prunes	4,745	681	365	21

The growing of orchard fruits is confined almost exclusively to the eastern half of the state, more than one-third of the total number of trees being reported by Walsh county.

In 1890 there were only 770 fruit trees in the state; of this number, 681 were plum and prune trees. In 1900 the number of fruit trees had increased to 7,329—nearly ten times that of the previous census. The number of plum and prune trees was 4,745, while the number of apple trees, of which there were only 65 in 1890, was 2,351. Taken together these varieties constituted 97.8 per cent of all the fruit trees reported. In addition to the number of trees shown in Table 20, 149 unclassified orchard trees were reported.

The value of the orchard products of 1899, including the value of 5 barrels of cider and 4 barrels of vinegar, was \$1,061.

Seasonal variations so affect the quantity of fruit produced in any given year, that comparisons between the crops of 1889 and 1899 have little significance.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1899 was 67 acres, distributed among 893 farms. The value of the fruits grown was \$7,785, an average of \$8.72 per farm. The acreage and production of the various berries were as follows: Currants, 36 acres and 35,440 quarts; raspberries and Logan berries, 12 acres and 13,700 quarts; gooseberries, 10 acres and 11,690 quarts; and other berries, 9 acres and 9,322 quarts.

VEGETABLES.

The value of all vegetables grown in 1899, including potatoes and onions, was \$843,706. Of this amount \$587,498, or 69.6 per cent, represents the value of potatoes. This important crop was reported by 26,148 farmers, or 57.7 per cent of the total number in the state. Aside from the land devoted to potatoes and onions, 4,161 acres were used in the growing of miscellaneous vegetables. The products of 3,345 acres were not reported in detail, but of the remaining 816 acres, 259 were devoted to cabbages; 156, to watermelons; 133, to sweet corn; 70, to turnips; 60, to beets; and 138, to other vegetables.

FLORISTS' ESTABLISHMENTS AND NURSERIES.

Floriculture is a relatively unimportant industry in North Dakota, only 3 florists' establishments having been

reported in 1900. The operators of these 3 establishments had a gross income of \$2,960, of which \$2,900 was derived from the sale of flowers and plants, and \$60 from other products. They used 10,184 square feet of glass surface.

The 3 nurseries in the state reported products valued at \$5,565, the entire amount being derived from the sale of nursery stock. The capital invested in land, buildings, and other improvements, was \$5,200; that in implements, \$475; and that in live stock, \$260; a total investment of \$5,935.

LABOR AND FERTILIZERS.

The total expenditure in 1899 for labor on farms, including the value of board furnished, was \$9,207,220, an average of \$203 per farm. The average per farm was \$825 for nurseries, \$216 for hay and grain farms, \$167 for florists' establishments, \$157 for live-stock farms, \$43 for vegetable farms, \$40 for fruit farms, and \$27 for dairy farms. The average per acre was highest on the most intensively cultivated farms. "Managers" expended, on an average, \$1,294; "share tenants," \$247; "cash tenants," \$177; and "owners," \$161. White farmers expended \$209 per farm, and colored farmers, \$5.

Fertilizers purchased in 1899 cost \$13,855, an average of less than \$0.50 per farm, but an increase of over 50 per cent since 1890. The average expenditure was \$7.00 for florists' establishments, the only class of farms which shows an average expenditure per farm greater than \$1.00.

INDIAN RESERVATIONS.

North Dakota contains four Indian reservations: Devils Lake, Fort Berthold, Standing Rock, and Turtle Mountain. The larger portion of Standing Rock reserve lies in South Dakota, but as the agency is located in North Dakota, the reservation was reported in that state. Agriculture is very uncertain on these reserves on account of the hot winds and irregularity of rainfall during the summer months. The census year, however, was favorable, and fair crops were raised on all the land cultivated. The land, in general, is best adapted to stock raising, and this occupation is receiving much attention, especially on the Fort Berthold and Standing Rock reservations, which have extensive ranges and hay lands.

With the exception of the Turtle Mountain, the Chipewa, and the Arikara of Fort Berthold, these North Dakota Indians are all of Siouan stock. Only a small per cent can speak English, and Government rations still constitute a large part of their subsistence. The larger number wear citizens' clothing, are industrious, and seem desirous of becoming self-supporting.

DEVILS LAKE RESERVATION.

Devils Lake reservation, comprising an area of 360.4 square miles, is situated in the northeastern part of the state, in Benson and Eddy counties. The land is high and rolling and the soil is a light sandy or gravelly loam which dries out very rapidly. Failures of crops from

drought have been so frequent in recent years that few of the Indians cultivate as extensively as they would if they had greater assurance of a harvest.

The population of the reservation, June 1, 1900, was 1,268, of whom 190 were farm operators, cultivating from 20 to 80 acres each.

Flax is the principal crop, closely followed by wheat, while oats, barley, and corn are raised to some extent. Wild grasses furnish the entire crop of hay, which is generally larger than the Indians can manage with the implements at hand. Most farmers cultivate small areas of potatoes, and a number also raise dry beans and other garden vegetables. Few of them have any cattle, and their horses are Indian pony stock, too small to run the gang plows and other heavy machinery required for prairie farming. A few own dairy cows, swine, and chickens.

FORT BERTHOLD RESERVATION.

Fort Berthold reservation is located in the west central part of North Dakota, on the Missouri River, and comprises an area of 1,508 square miles. This region is well adapted to stock raising, the upland prairies furnishing ample range throughout the year. On account of the hot, dry winds and uncertain rainfall, agriculture is not carried on extensively, although the land is fertile and in seasons of sufficient moisture produces good crops.

The three years preceding 1899 were so discouraging

that many Indians at Fort Berthold did not plant their usual crops in the census year, although the season proved to be a favorable one. Of the cereals, wheat and corn were raised most extensively, although many farmers also sowed oats. Nearly all had several acres of potatoes under cultivation in addition to small patches of melons, onions, beans, pease, cabbages, and other vegetables. The majority of the 239 farmers cultivated from 5 to 40 acres besides cutting large areas of prairie grass.

Stock raising is growing rapidly in importance and will eventually place the people of this reservation on a self-supporting basis. The last issue of live stock was made to them in 1898 and consisted of 1,000 heifers and 40 bulls. Nearly all Indians now own a small number of cattle while some have large herds. Although in recent winters severe storms have scattered and killed many of their cattle, the majority reported sales of live stock in 1899 ranging from \$25 to \$500, while the receipts of one Indian from this source amounted to \$5,475. The larger number of their horses are Indian pony stock, but a few have a good grade of American horses. Dairy cows and chickens are found on but few farms.

Only 24 per cent know enough English for ordinary conversation, and Government rations still constitute 60 per cent of their subsistence.

STANDING ROCK RESERVATION.

Standing Rock reservation lies on the west bank of the Missouri River, and contains an area of 4,176 square miles, of which approximately three-fifths are in South Dakota.

This reserve is the home of the Blackfeet, the Hunkpapa, and the Lower and Upper Yanktonai bands of the Sioux, numbering in all 3,886. The reservation is best adapted to grain, but, although the soil is in general a deep, rich loam, the hot winds and insufficient rainfall often prevent crops from maturing. Consequently stock raising is the principal pursuit of the Indian farmers, although most of them grow a few crops and in addition cut large quantities of wild grass. They are beginning to realize that from their cattle must eventually come their support, and are giving them much better care than formerly.

Their cereals, planted every year in hope of a harvest, rarely yield more than the quantity seeded. The season of 1899, however, was a favorable one on the Standing Rock reserve and the Indians harvested considerable quantities of corn and oats. Individual acreage in these crops was very small, usually from 2 to 10 acres. Vegetables did well and nearly all farmers raised potatoes, while many had small fields of melons, pumpkins, pease, beans,

and onions. A few grew sugar beets, which have been found to be well adapted to this soil. Wild hay, however, is the most important and extensive crop, and besides making enough for their own use, the Indians sell large quantities to the agency, military post, and traders. The improved area of the farms of the majority of the 780 Indian farmers ranged from 5 to 40 acres.

Most Indian farmers have made a start in stock raising, and some already have substantial herds. The majority reported small sales of live stock, the annual receipts ranging from \$25 to \$500. Indian ponies constitute the greater part of their wealth in horseflesh, although some have horses of a better grade. Swine and chickens are found on a number of farms.

Approximately 98 per cent of these Indians wear citizens' clothing and 23 per cent speak English. Government rations constitute 50 per cent of their subsistence.

TURTLE MOUNTAIN RESERVATION.

Turtle Mountain reservation, the home of the Turtle Mountain Chippewa, is situated in the extreme north central part of the state, in Rolette county, and contains an area of 72 square miles. Less than one-third of this tract is cultivable, lakes and timber land comprising a large part of the surface, while the southern half is a prairie, rough, stony, rolling, and containing but little good farming land. Most of the soil is poor, and innumerable failures of crops have greatly discouraged the Indians and kept them in poor circumstances. The timber supply, which is rapidly decreasing, is their only resource when crops fail. The number of Indians, 2,393, is too large to find subsistence on the reservation, and many have taken up claims beyond the borders.

The principal crop of the Turtle Mountain Indian is wheat, although oats, barley, and flax are generally grown. Their hay crop consists of the prairie grass. Nearly all Indian farmers raised potatoes, but no other vegetables were reported. The season of 1899 was a favorable one and all crops did well, the majority of the 67 Indian farmers cultivating in that year from 20 to 80 acres. Nearly every farmer had a few cattle in addition to his ponies and work horses, but none owned any considerable number of range cattle, or raised beef for the market. Many had dairy cows, and chickens were found on most farms.

Government rations constitute but 25 per cent of the support of this band, 94 per cent wear the garb of the white man, and 59 per cent know enough English for ordinary conversation.

IRRIGATION STATISTICS.

Irrigation in North Dakota is confined to the north-western part of the state, and is not generally practiced even there, as the total farm area of the two counties of Ward and Williams is almost ninety times the irrigated area, and comprises 84.5 per cent of the irrigated acreage of the state. The water is applied chiefly to pasture and wild hay lands.

The principal statistics of irrigation are shown in Table 21.

Of the area irrigated in 1889, 4,815 acres were supplied with water from streams, and 57 acres from wells. In 1889, 7 farmers reported an irrigated area of 445 acres.

TABLE 21.—NUMBER OF IRRIGATED FARMS, AREA IRRIGATED, AND COST OF IRRIGATION SYSTEMS IN 1890.

COUNTIES.	Number of irrigated farms.	Acreage irrigated.	Construction cost of irrigation systems.	Average cost of construction per acre irrigated.
The State -----	54	4,872	17,980	\$3.71
McHenry -----	7	475	2,462	5.12
Ward -----	15	1,484	5,582	3.76
Williams -----	23	2,032	7,989	3.94
Other counties -----	9	281	947	3.37